Wireless Vision Engineering Tracking

THE QUEEN'S AWARDS FOR ENTERPRISE: 2014

User Manual

Wired handheld scanner

iSCAN101

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1 Important Notes on Operating Instructions

1.1 Safety information

Warnings are highlighted by a particular symbol and a different font colour:

Danger

Non-compliance may result in life-threatening situations.
This warning must be heeded.

Warning

This type of warning concerns dangerous situations that may result in minor injuries.

Info

Important and helpful notes and information.

1.2 Notes on the Operating Instructions

Before starting up the equipment please read the manual thoroughly.

The Operating Instructions contain important information on functionality as well as safety rules. If these are not heeded, normal operations within hazardous areas cannot be guaranteed.

The notes contained in this manual are important for starting up and operating the product.

These instructions may be updated at any time. Extronics Limited reserves the right to make changes to this document.

Before they use the product, users must ensure that they have the most up-to-date version of the operating instructions.
To make sure this is the case, please check Extronics' website at www.extronics.com or contact one of the company's staff.

The drawings contained in these operating instructions are for illustration purposes only and may differ somewhat from the actual design.

No changes may be made to the device that were not intended or approved by Extronics Limited.

If the handheld scanner is not used properly, the operating permission for hazardous areas may lapse for the device in question.

Non-adherence to the instructions will void any warranty.

For further information on the commission of the iSCAN101 handheld scanner you may also wish to refer to the manual issued by SICK AG (www.SICK.com)

1.3 General Notes of Caution

Caution / Notes

- The devices may only be operated when fully assembled.
- In hazardous areas the devices must not be wiped or cleaned with a dry cloth!
- The device must be switched off immediately if it is likely that as a consequence of damaging impact or general peculiarities the device can no longer be safely operated. (e.g. ingress of water or other fluids, temperatures outside of the specified range,...)
- General statutory requirements or health and safety rules and accident prevention guidelines and environmental laws must be adhered to (e.g. the German Occupational Health and Safety regulation).
- Users must not open the device.
- Users must not make any changes to the device. Components may not be exchanged or replaced. If non-specified components are used, explosion protection is no longer guaranteed.
- Ensure safe handling with firm footing and sufficient room for movement.
- If the enclosure is in any way damaged the device must be removed from the hazardous area immediately.
- In accordance with IEC 60079-19 and IEC 60079-17, operators of electrical installation in hazardous areas are obliged to have them serviced by qualified electricians.
- Do not insert any sharp objects into the enclosure or any other openings of the handheld barcode scanner. Any openings at the device must not be covered or blocked.
- The device and any accessories must be properly disposed of, i.e. as legally specified, for example by a certified company.

Notes on installation

- Electrical plants are subject to certain regulations concerning installation and operation (e.g. RL 99/92/EG, RL 94/9EG, or the national rules such as IEC 60 079-14 and VDE 0100).
- In the hazardous area it is the operator's responsibility to carry out any repair and maintenance in compliance with applicable rules.

Caution on laser devices

Devices fitted with laser fall under standards US 21 CFR 1040.10 and EN 60825-1. The laser's classification is stated on a plate affixed to the device. Class 1 lasers are deemed inherently safe during normal use, but users must not look directly into the light source. The following declaration is required by American and international laws:

Usage of control elements, adaptations or the use of procedures that differ from these instructions may result in a dangerous exposure to laser beams.

Class 2 lasers use a visible low-voltage LED. As with any source of bright light, such as the sun, the user should avoid looking directly into the light. Brief exposure to a class 2 laser is deemed not dangerous.

Maintenance

Provided the device is operated and assembled according to instructions and the ambient requirements are being met continuous maintenance is not necessary.

Servicing

Operators of electric equipment in hazardous areas are obliged to have them serviced by qualified electricians (IEC 60079-19 and IEC 60079-17).

Repairs

Repairs may only be carried out by the manufacturer or by persons trained and commissioned for this purpose by the manufacturer.

The device is closed ex-factory. It may only be opened in the factory by specifically trained personnel.

Software installation

For instructions on how to install the software at the PC please refer to the manual issued by SICK Vertriebs-GmbH in Düsseldorf.

Operation

Before operating the device you must ensure that all necessary components are available.

2 Product Information

2.1 Manufacturer

Extronics Limited
1 Dalton Way
Midpoint 18
Middlewich, UK
CW10 0HU

Device: iSCAN101

2.2 Explosion protection

- II 2G Ex ib IIC T4
- II 2G Ex ib IIC T4 Gb
- II 2D Ex ib IIIC T135°C
- II 2D Ex ib IIIC T135°C Db

Protection category: IP65

Nominal data: Operating voltage U = 5.6V / 4.9V

2.3 Technical Data

RS232 5.6V version:

- maximum input voltage Ui 5.6 V
- maximum input current Ii 480 mA
- maximum input power Pi 1.25 W
- maximum internal inductance Li negligible
- maximum internal capacitance Ci 46 µF

Note: The input voltage in to the handheld scanner itself is reduced by the associated connection cable ISCAN101CAB5 or 6 from 5.6V to 4.9V.

RS232 4.9V version:

- maximum input voltage Ui 4.9 V
- maximum input current Ii 480 mA
- maximum input power Pi 1.25 W
- maximum internal inductance Li negligible
- maximum internal capacitance Ci 102 µF

USB version:

- maximum input voltage Ui 4.9 V
- maximum input current Ii 480 mA
- maximum input power Pi 1.25 W
- maximum internal inductance Li negligible
- maximum internal capacitance Ci 102 µF

Technical Data (Scan engine)	• Light source: Visible red light, 630nm • LED safety: LED classification acc. to DIN EN 60825-1 • Scan rate: 500 scans per second • Reader distance: 50mm to 800mm (0.5mm)
Dimensions	• 104 x 76 x 185 mm (length x width x height)
Ambient temperature	-20°C to +50°C
Storage temperature	-30°C to +70°C
Weight	ca. 200g (without connection cable)
Test certificate	IBExU12ATEX1120
Optional interfaces	RS-232 TTL / USB
Terminal assignment (Handheld scanner)	USB cable USB/D+ green USB/D- white GND black +UB brown

2.4 Combinations

RS232/RS422
used with connection cable ISCAN101CAB1 or 2
and only for connection to power supply ISCANPS1 or 3

USB version
used with connection cable ISCAN101CAB3 or 4
and only for connection to power supply ISCANPS2 or 4

All wired handheld scanners in Stacked PDF version (iSCAN101PDF) can be equally combined.

2.5 Serial numbers

Serial key:	year of manufacture	serial number
	2 numbers	4 numbers

Example: 130001

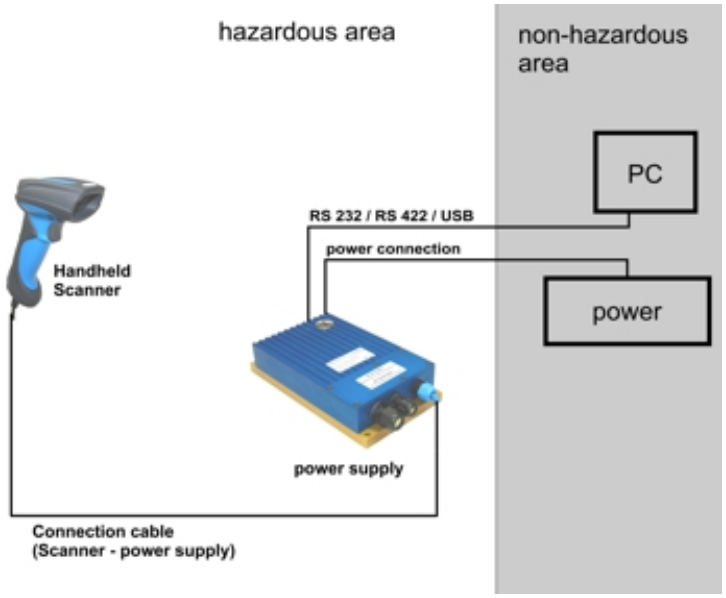
2.6 Application

The scanner is a handheld device.

Its purpose is portable capture and direct transfer of data in hazardous areas. The device has been designed for use in hazardous area zones 1 and 21.

3 System Assembly

Overview of the complete system assembly, wire handheld scanner iSCAN101



3.1 Description

The wired handheld iSCAN101 scanner was designed for use in hazardous areas. Normal operation requires a power supply, a connection cable between power supply and scanner, and a connection cable between power supply and a PC.

Required connection cable to a PC: USB: 0.2 - 2.5 mm², 4-wire
or RS232: 0.2 - 2.5 mm², 3-wire

The handheld scanner and the power supply can be connected and operated in the hazardous area. For safe installation please refer to the manual issued by SICK AG (www.SICK.com)

For the professional use of the power supply ISCANPS the operating instructions of the manual of the power supply are necessary.

The warnings and notes of caution contained in these operating instructions and in the manual issued by SICK AG (www.SICK.com) must be adhered to.

3.2 Cable range in System Assembly

RS232	iSCAN101	1.8 or 3.8m or optional with 4.5m or 6m extension	iSCANPS	Up to 20m	Host
USB	iSCAN101	1.8 or 3,8 m	iSCANPS	Up to 5m	Host

4 Step-by-step guide on installation and operation

4.1 Step 1 - General connection of ISCAN101 handheld scanner

	Insert the RJ45 plug of the cable connecting the handheld scanner with the power supply at the bottom of the scanner. Make sure the plug has engaged fully.
	Cable connected to the wired handheld scanner
 	Insert the plug of the connection cable into the power supply's plug connector. Ensure that the connection is fully secured with the screw cap after the plug has been inserted.

4.2 Step 2 - Connection of ISCANPS power supply

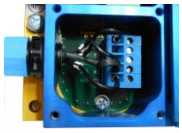
The terminal assignment is located underneath the removable cover at the front of the power supply.

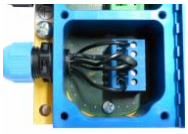
Caution: Do not open enclosure in the hazardous area.

Before operating the device in a hazardous area you have to ensure that the enclosure has been closed fully and all screws have been tightened.

Cables may only be connected by trained staff.

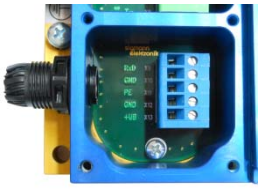
Pin assignment of the plug connector and the pin assignment of the direct connections to the power supply ISCANPS

Pin assignment	Handheld scanner RS232 cable		Power supply	
	Wire number pin assignment connection coupling	Definition	Terminals Definition	Terminal number
	3	TxD	RxD	X9
			GND	X10
			PE	X11
	2	GND	GND	X12
	1	+UB	+UB	X13

Pin assignment	Handheld scanner USB cable		Power supply	
	Wire number pin assignment connection coupling	Definition	Terminals Definition	Terminal number
	3	D+	D+	X9
	2	D-	D-	X10
			PE	X11
	4	GND	GND	X12
	1	+UB	+UB	X13

4.3 Direct connection of the ISCAN101 handheld scanner without plug connection to the power supply with RS232 interface - connection with cable end sleeve

Pin assignment	RS232 cable			Power supply	
	RJ45 pin assignment	Wire colours	Definition	Connection terminal power supply	Definition
	6	White	TXD	X9	RXD
				X10	GND
				X11	PE
	7	Brown	GND	X12	GND
	3	Yellow	+UB	X13	+UB

	intrinsically safe connection box of the ISCANPS RS232 power supply after removal of the wires of the plug connection

4.4 Direct connection of the scanner without plug connection to the power supply with USB interface - Connection with cable end sleeve

Pin assignment	USB cable			Power supply	
	RJ45 pin assignment	Wire colours	Definition	Connection terminal power supply	Definition
	2	Green	D+	X9	D+
	10	White	D-	X10	D-
				X11	PE
	7	Black	GND	X12	GND
	3	Brown	+UB	X13	+UB

	intrinsically safe connection box of the ISCANPS USB power supply after removal of the wires of the plug connection

5 Attachment

5.1 EC type examination certificate: iSCAN101

5.2 EC type examination certificate: iSCANPS

6 Contact

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